

Patent Claims

1. A data bus system having a plurality of control units which interchange messages with one another via a data bus and which are provided for controlling components, the individual control units being of modular design and being fitted in different installation spaces in a technical product, wherein the control units are designed as distributed control units having individual modules a plurality of which can be arranged independently of one another and some of which are connected via an internal data bus, and the individual modules in a control unit produce data and signals for driving the same component/components with individual modules identical in terms of hardware being provided in different control units, and in that at least two different types of individual modules are provided in a plurality of control units, with one output-stage individual module provided in a plurality of control units being provided for the purpose of driving actuators and another logic individual module using a logic circuit or a microcomputer to produce digital input and output signals from digital information.

2. The data bus system according to Claim 1, wherein the output-stage individual module has a printed circuit board on which a transmission/reception interface for the internal data bus and at least one output stage for driving an actuator are provided.

3. The data bus system according to Claim 1, wherein the logic individual module has a printed circuit board on which a transmission/reception interface for the internal data bus and a circuit for processing digital data signals for the purpose of controlling a technical component are provided.

4. The data bus system according to Claim 1, wherein the printed circuit board is a flexible floppy printed circuit which is mounted within a provided installation space in the region of the technical component which is to be controlled.

5. The data bus system according to Claim 1, wherein an analog individual module is provided on a separate printed circuit board which has a transmission/reception interface for the internal data bus and analogue driving means for sensors and light-current actuators.

6. The data bus system according to Claim 1, wherein a signal-converter individual module is provided which converts the messages from the data bus into messages for the internal data bus and allocates the messages for the respective appropriate individual modules.

7. The data bus system according to Claim 1, wherein a power data bus is also provided which respectively supplies the individual modules with power.

8. A data bus system, comprising:

- a first control unit comprising a first set of individual control modules for respectively controlling a first set of components, wherein the individual control modules of the first set are substantially identical in terms of hardware but different in terms of software; and

- a second control unit comprising a second set of individual control modules for respectively controlling a second set of components, wherein the individual control modules of the second set are substantially identical in terms of hardware but different in terms of software.

9. The data bus system of claim 8, wherein each of said individual control modules of said first set comprises a microcomputer.

10. The data bus system of claim 8, wherein each of said individual control modules of said first set comprises a switching device to selectively drive one or more corresponding components.

11. The data bus system of claim 8, wherein said first control unit comprises an internal data bus coupled to said first set of individual control modules.

12. The data bus system of claim 8, wherein at least one of said first set of components comprises a window lifter of a vehicle.

13. The data bus system of claim 8, wherein at least one of said first set of components comprises a seat-adjustment device of a vehicle.

14. The data bus system of claim 8, wherein at least one of said first set of components comprises a closing device for a door of a vehicle.

15. The data bus system of claim 8, wherein at least one of said first set of components comprises an adjustment device for an electric mirror of a vehicle.

16. The data bus system of claim 8, wherein at least one of said first set of components comprises an actuator.

17. The data bus system of claim 8, wherein said first control unit comprises a signal converter to receive a command, buffer said command, and transmit said command to at least one of said first set of individual control device.

18. The data bus system of claim 17, wherein said first control unit comprises a multimedia device coupled to said signal converter.

19. The data bus system of claim 8, further comprising a data bus coupled to said first and second control units.

20. A vehicle comprising a control unit including a plurality of individual control modules for respectively controlling a plurality of components, wherein the individual control modules are substantially identical in terms of hardware but different in terms of software.